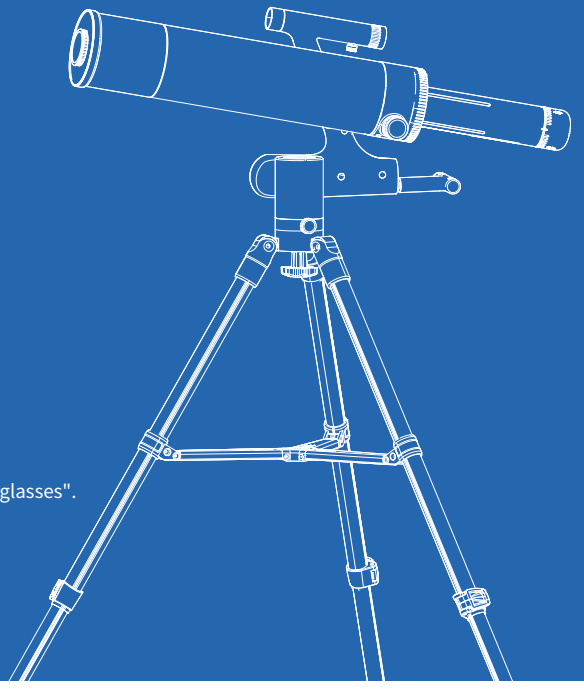
BEAVERLAB Intelligent Astronomical Telescope

DDL-TW1 Instruction Manual

BeaverLAB

Please read this manual carefully before using the product!
Please keep the instruction manual properly!



Special Reminder:
Do not observe the sun directly when not wearing "Bud film sunglasses".
Otherwise, the image sensor will burn out.
Image Collector: WIFI Password: 12345678

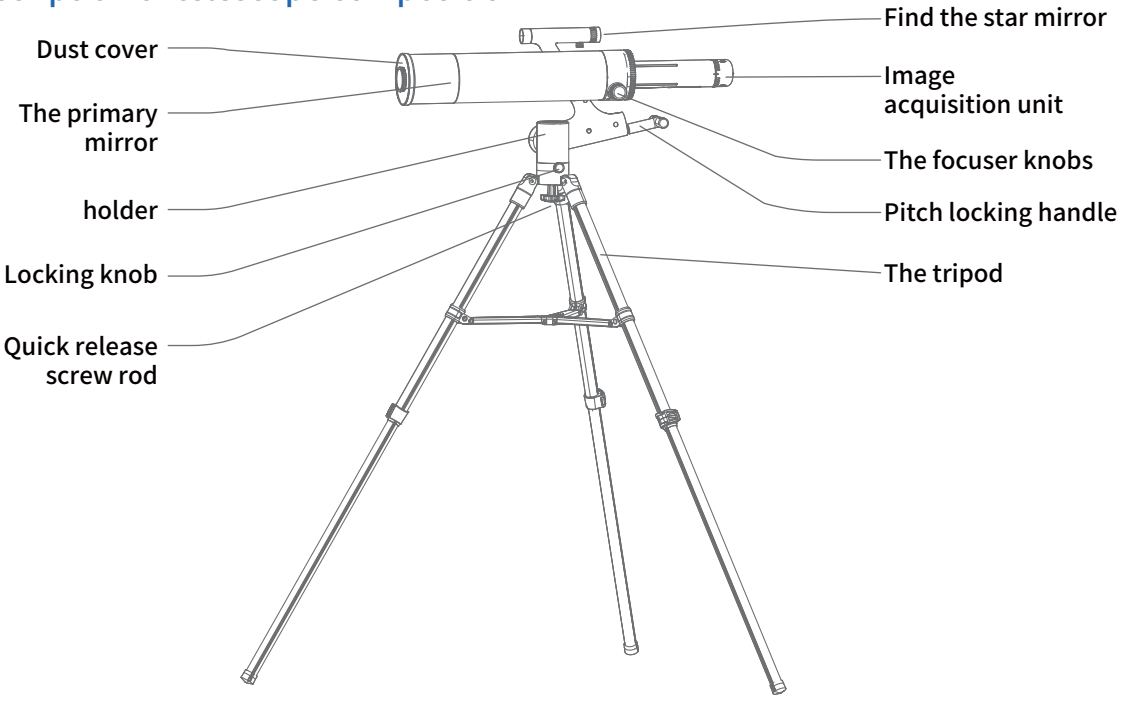
Directory

01 Product Overview

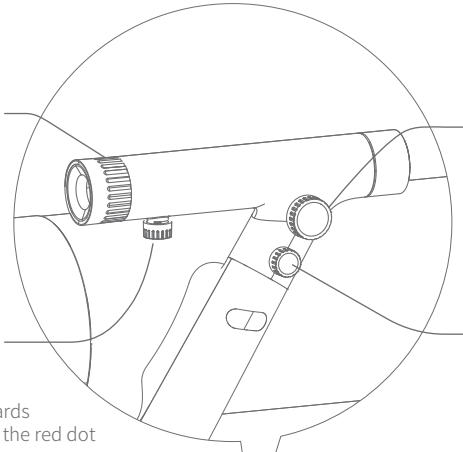
Thank you for purchasing Dangbei Intelligent Astronomical Telescope.

Please read this manual carefully before use and keep it properly. Do not use the telescope without knowing how to use it In order to avoid unnecessary loss caused by wrong use.

Description of telescope composition



Description of telescope knobs



Starfinder red dot left and right fine-tuning knob

Fine tune the red dot clockwise to the left

Fine tune the red dot counterclockwise to the right

Starfinder red dot up and down fine-tuning knob

Fine tune the red dot clockwise upwards backwards Needle down to fine tune the red dot

Starfinder red dot switch

Brightness trim knob

Fine tune the red dot to lighten

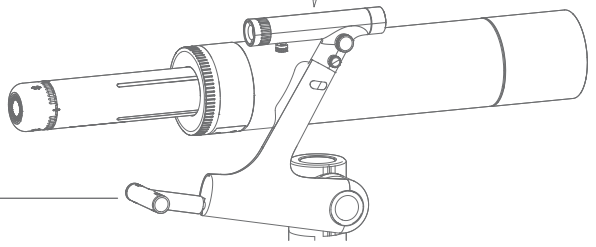
reverse time clockwise Needle fine tuning red dots to darken

close

Star finder fixed locking knob

Lock the star finder clockwise

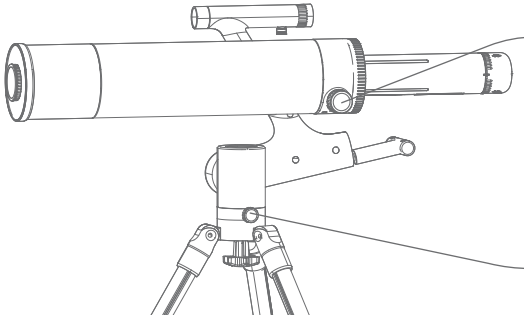
counterclockwise Release the starfinder



Tilt lock handle

Lock pitch clockwise

loosen counterclockwise Open, can be bent through the grip Their operations.



Focal length adjustment knob

★ The rack at the bottom of the focusing seat is coated with grease. Do not touch it.

Lock knob in horizontal direction of gimbal

Clockwise lock for horizontal turn
counterclockwise release.

02 Usage Instructions

- Protect the lens of the objective lens and close the dust cover after use to avoid dust or foreign objects.
- Pay attention to protect the image collector. Please put the protective cover on after use to avoid dust or foreign matter.
- The telescope is suspended from the side, without heavy weight.
- When you do not use this product, please lock the various institutions of the gimbal to avoid the rotation of the astronomical telescope under the action of gravity.
- Please use in the environment of -10°C-45°C.
- This product is not waterproof, please avoid getting wet by any liquid.
- Keep away from fire and heat sources.
- Please keep dust out of the lens.

- This product is a precision instrument, please avoid collision and violent vibration.
- In the case of low temperature, the available capacity of the battery will have different degrees of decay, this is the characteristics of lithium batteries, is a normal phenomenon.
- In case of any abnormal phenomenon, please refer to the troubleshooting manual in time. In case of any unsolvable fault, please refer to the after-sales instructions.
  Disassembling telescopes without permission is not covered by the warranty policy and may result in irreparable damage.

Special Warning

- Do not directly observe the sun without properly installed Bader film sunglasses. This will cause the image collector chip to burn.
- Minors should be accompanied by an adult.
- Private modification of the telescope is prohibited.
- When the telescope is not in use, please cover the dustproof cover to keep the machine clean.

03 Installation Instructions

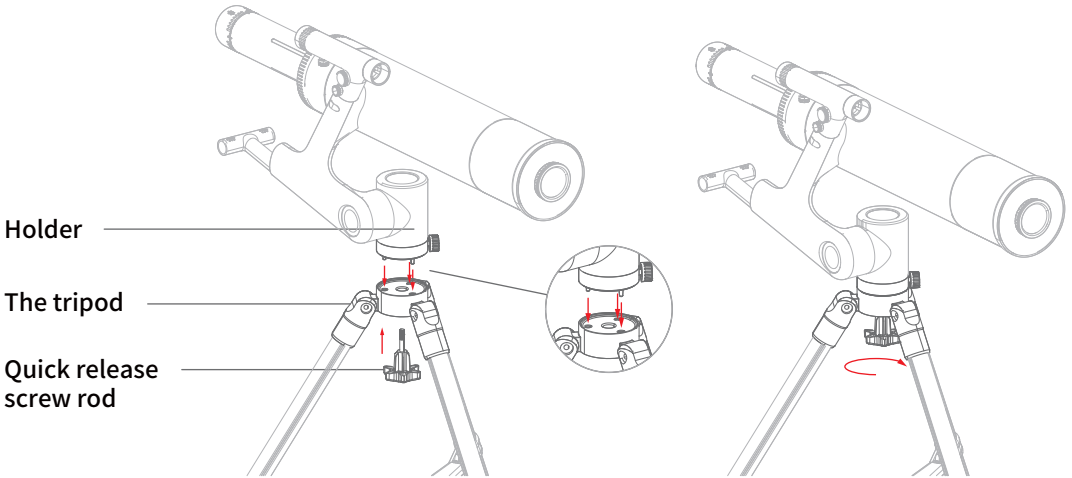
After receiving the product, users are required to complete the overall assembly of the product by themselves.

Install the tripod

1. Take out the tripod, loosen the fastening knob of the tripod, and pull out each leg to a uniform length.
2. Flatten the folded structure in the middle of the tripod.

Install primary mirror barrel with tripod

1. Prepare the main mirror, the whole head, the tripod, and the quick detachable rod, as shown below.
2. Take out the main mirror and the cradle head, and align the three positioning pins of the cradle head base with the corresponding three holes on the tripod.
3. Insert the quick disconnecting rod into the hole at the bottom of the tripod and tighten it clockwise.

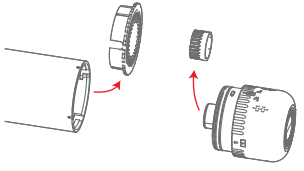


★ During the removal, it is necessary to hold the head of the gimbal and the mirror barrel by hand while loosening the quick detachable rod to prevent falling.

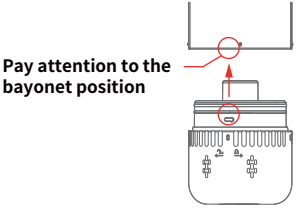
Installation of image collector

1. Get the image collector ready.

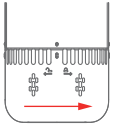
2. Align the locking clip on the side of the image collector with the notch of the telescopic cylinder and insert it, and then rotate the image collector to align the mark point to fix and jam.



① Take off the dust cover



② Insert the image collector



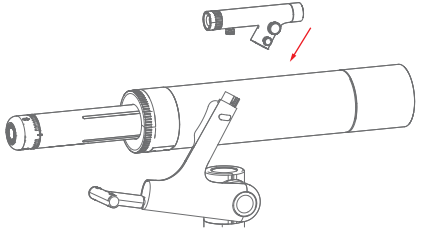
③ Rotate clockwise to the locking position

Install the star finder

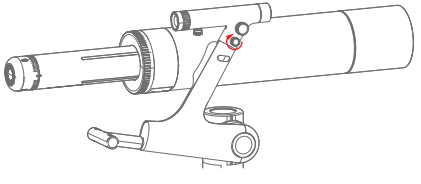
1. Prepare the star finder and align the star finder with the support port. Note the gap in the port.

2. Tighten the fixing knob of the star finder.

Tip: Pay attention to the installation direction of the star finder.



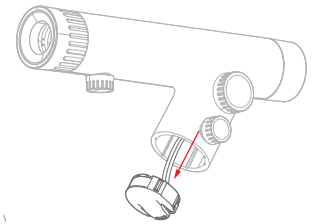
① Insert the star finder into the support interface



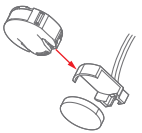
② Tighten the fixing knob of the star finder

Replace the battery

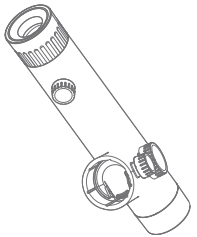
1. Take out the star finder, place the battery in the interface where the star finder is inserted into the support, and remove the battery holder with your fingers or tweezers.
2. The star finder uses CR-2032 battery. When replacing the button battery, pay attention to the positive and negative terminals of the battery.



①Take out the battery holder together (Be careful to loosen the locking knob)



②Replace the battery,Pay attention to the positive and negative electrodes



③Put the battery holder back, pay attention to the direction and position

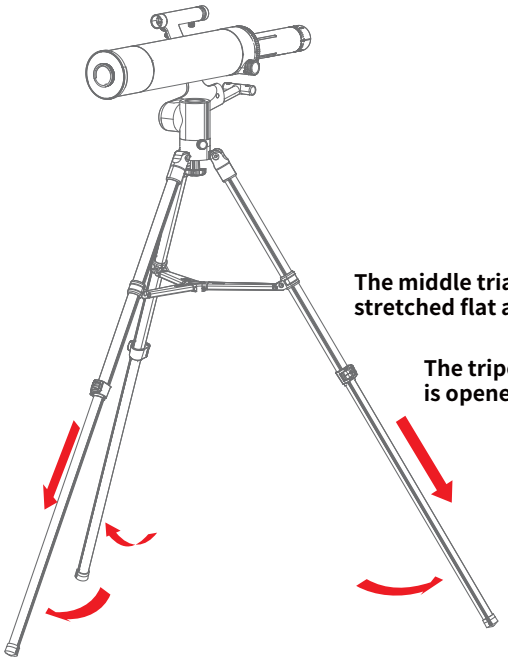
Calibrate the red dot star finder

1. Find a target more than 100 meters away with your naked eye.
2. Adjust the primary mirror of the telescope to find the target as a whole and move to the center of the field of view.
3. Turn on the star finder red dot switch and turn on the light.
4. Find the red dot inside the circular observation mouth at the back of the star finder.
5. Adjust the position of the red dot through the knob next to the star finder mirror. The whole assembly is not finished until the red dot coincides with the target and the calibration is completed.

Tip: After the observation, please turn off the red dot of the finderscope.

04 User Procedure

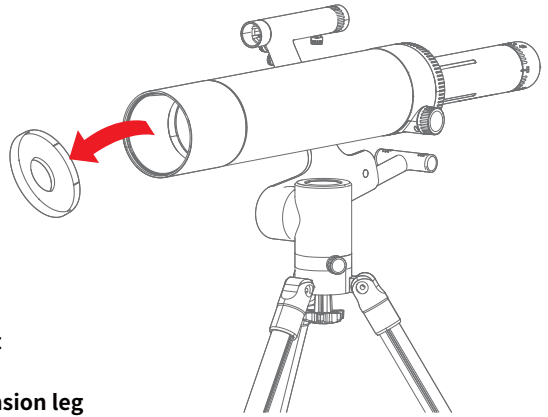
The tripod is placed smoothly



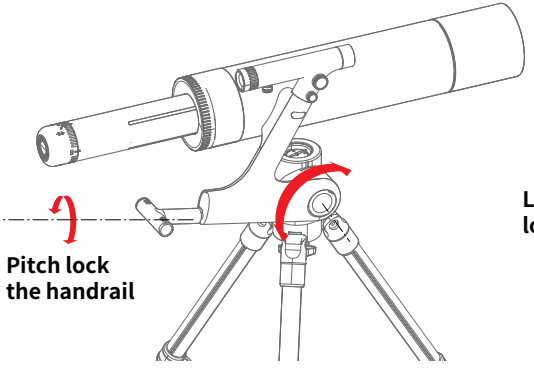
The middle triangle is stretched flat and tight

The tripod extension leg is opened and locked

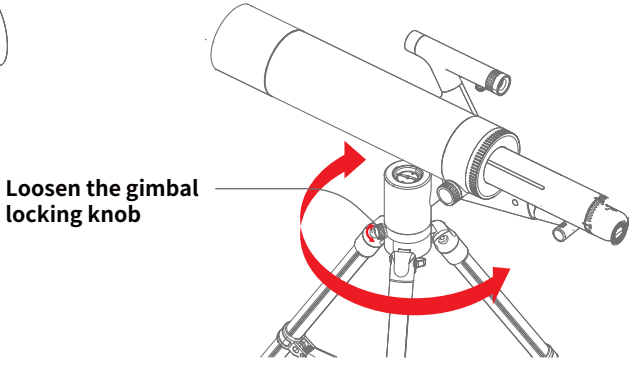
Remove the dust cover



Pitch steering adjustment

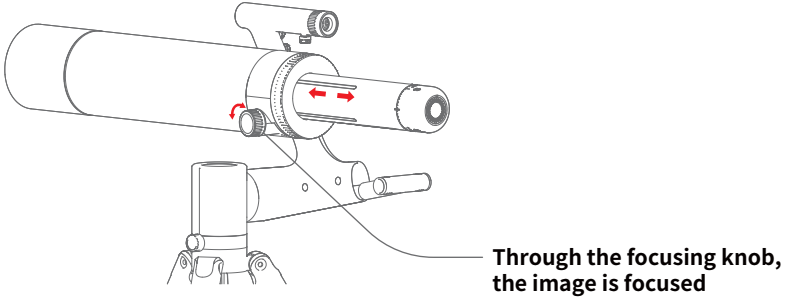


Horizontal steering regulation



Release the gimbal locking knob and pitch locking armrest to confirm the observation target.

Through the focal length adjustment knob can focus the image, so that the image is more clear



Use of image collector:

This product is equipped with an image collector

Support wireless observation, and wired observation (users need to be equipped with OTG adapter, Apple system can not be wired connection.

Image collector interface and switch instructions:

Image collector indicator light

Blue light breathing: wifi is not connected in wifi mode.

The machine is in standby state and automatically shuts down after 3 minutes without operation.

Blinking blue: The usb port is not connected.

Blue light is on: the machine is normally connected.

Blinking red: Power is low. Please charge in time.

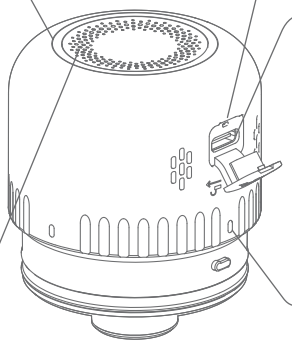
Red breathing light: charging status.

Steady red: The battery is fully charged.

Image collector switch button

On and off machine: long press for 2 seconds to switch on and off machine.

★ Mode switch: Double-click to switch between wifi mode and USB connection mode.



Reset button

When there is a crash, you can press the reset key through small objects, restart the boot again.

type-C Indicates the data transmission interface

Image and video transmission: Connect to a computer or pad and open the software to watch relevant images and videos in real time.

Charging: When the image collector is short of power, the light ring will turn to red flash.

At this time, please connect the adapter through the Type-C charging cable for charging.

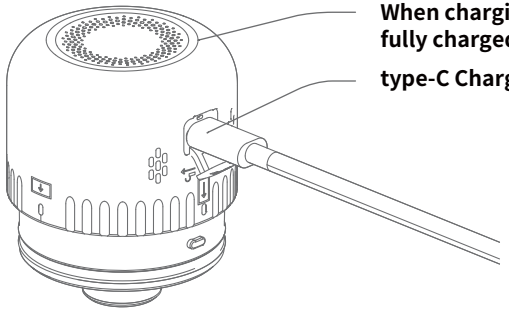
The red light will be on when fully charged.

Orientation calibration

When installing the image collector, align the locking position with the image collector

The scale can be used to confirm whether the card is tight.

Charging instructions



When charging, it is a red breathing light, and when fully charged, it turns into a long red light.

type-C Charging port

The image collector can be charged using a 5V1A charger.

Do not charge the battery for more than 12 hours to avoid affecting the battery life.

Mobile phone wireless connection

APP download and installation:

1. The image collector should be fully charged before use. If the observation time needs to be extended, it can also be equipped with charging devices such as mobile charging bank to charge in time during the observation.
2. Scan the QR code below to download the APP (search "Beaver Point" in App store or Google Play to download the APP)

Android

Scan here to download APP

iOS

3. Long press the image collector for 2 seconds to start the device, and then it will be in standby state (the blue light is breathing at this time). Open the APP of the mobile phone, select Add Device → select the wifi name corresponding to the astronomical telescope (such as DL-TW1-XXXX), and connect→ Click Enter after it shows that it has been connected.

WIFI password for image collector: 12345678

4. Open the home page and click Start observation to enter the real-time transmission screen.

5. In the process of observation, images can be obtained by taking photos and videotaping. Click below the pictures to download and save them in the system album.

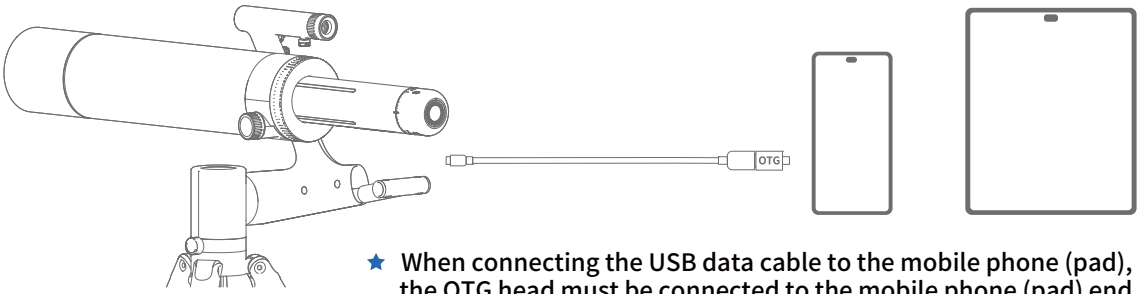
6. The exposure, sharpening, contrast, saturation and other parameters of the image can also be adjusted in real time through the App to achieve the optimal overall effect.

7. Click Astronomy Science on the home page to learn about the eight planets and main constellations of the solar system.

Mobile phone, pad and other wired connection

① Double-click the switch on the image collector to switch the default wifi mode to wired connection mode.

② Connect the device to the image collector through USB data cable.



★ **When connecting the USB data cable to the mobile phone (pad), the OTG head must be connected to the mobile phone (pad) end.**

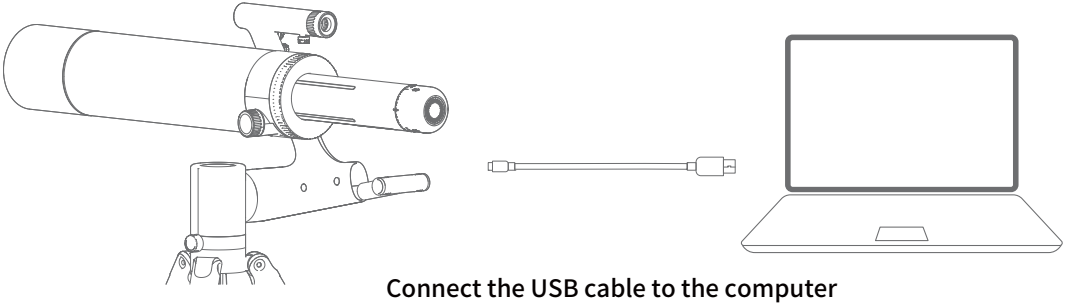
③ Open the APP and click "Start Observation".

In the pop-up "Allow the app Beaver Point to access the USBdevice?? Dialog box, click OK.

Wired computer connection

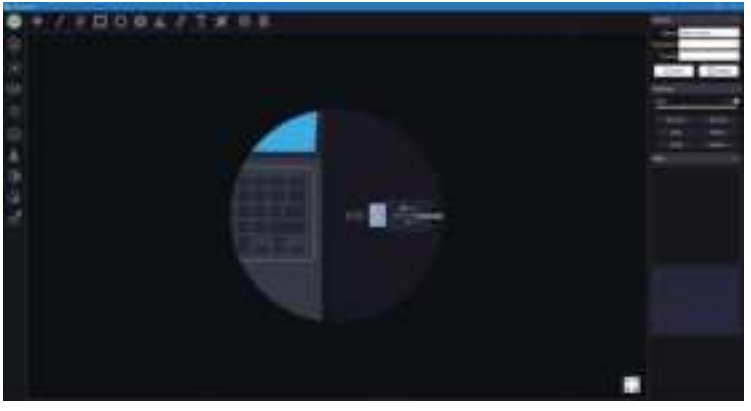
①Double-click the switch of the image collector to switch the default wifi mode to wired connection mode.

②Connect the computer to the image collector through USB data cable.



Connect the USB cable to the computer

③ Open the Windows software and select the device to observe.



Computer users can download the Windows version of the software to's official website (https://www.beaverlab-tech.com)

Pay attention to the cable connection

1. IPhone and pad do not support wired connection.
2. Mobile phone and pad users need to purchase OTG adapters.
3. Before use, the wireless mode of the image collector needs to be converted to the wired mode, and the mode switch can be realized by double-clicking the switch button.
4. In wired mode, the image collector will enter the automatic charging mode.

Astronomical observations

Guide to Lunar Observation

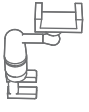
1. Connection: On a clear and moonlit night, check the device to ensure sufficient power of the device. Connect the device through mobile phone to realize real-time image transmission.
2. Moon search: open the switch knob of the red dot star search mirror, and find the red dot, find the moon through the star search mirror, and overlap the red dot with the moon target center by turning the head.
3. Moonwatching: Use the focus knob until the image is clear.
   If you need to observe other stars, you can use star finder software or manual astrolabes to find them.

The telescope is equipped with a compass, combined with the gift of astrofinder, you can confirm the current map of the sky, and compare the map to find specific stars or nebulae for observation.

See the Astrolabe manual for specific usage

05 Accessories And Tools

Image Acquisition Unit



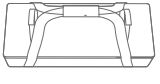
Mobile Phone Stents

Bud Film Sunglasses

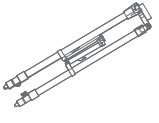
The Astronomy Science Book Hello Universe (optional)

Cable

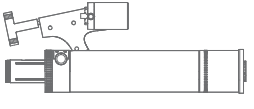
Find Chart



The Portable Bag



The Tripod



Telescope And Head Set

Find The Star Mirror

06 Telescope Faults And Troubleshooting Methods

Phenomenon of the problem	Reason	Processing method
The starfinder's red dot is not bright	The battery is dead.	Replace the battery
The device cannot be charged	The charging port is not securely inserted No power access Equipment failure	Remove and reinsert the interface Put through power supply Send to repair
The image collector device cannot be used normally	There is a power shortage in the image collector Image collector water short circuit The image collector crashed	Timely charging Send to repair Press the reset button once to reset
Image fuzzy	The ambient temperature changes rapidly, causing the lens to fog Image collector lens filter is dirty	At a constant temperature, Use it after the fog clears Wipe the filter with a cotton swab dipped in alcohol
Fall、impact to cause the shell broken、 crack	Damage caused by external use	Man-made damage is not covered by the warranty
The product can not be shut down or the key failure	Crash	Press the reset button once to reset

Dangdang Cat Intelligent astronomical telescope is a precision optical equipment with high professional degree. If there is a fault other than the above phenomenon, it needs to be sent back to the factory for repair.

It is recommended to do the following in daily use to keep your telescope in the best condition:

When you do not use this product, please put the dust cover on the objective lens to protect the lens and prevent dust at the same time. If there is dust on the image collector, it is recommended to use camel hair brush or air to blow it off.

Do not clean the optical lens as much as possible. A little dust on the lens will have little effect on the overall image.

Keep the telescope in a cool and ventilated place.

Warning: Do not use chemical lens cleaning solutions, which may damage optical parts.

07 Trademark And Legal Statement

Due to the continuous improvement of product functions, design changes and other reasons, this manual may be inconsistent with the product you purchased, please refer to the actual product.

08 Overall Telescope Parameters

Brand	BEAVERLAB
Product Name	BEAVERLAB Intelligent Astronomical Telescope TW1
Product Model	DDL-TW1
Product Color	Black、Blue
Aperture	F/6.1
Focal Length	500mm
Type	Refractor
Image acquisition unit	
Battery Capacity	1700mAh
Charging Source	1A DC5V ⎓
Charging Port	Type-C

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—— Reorient or relocate the receiving antenna.

—— Increase the separation between the equipment and receiver.

—— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—— Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

BEAVERLAB Intelligent Astronomical Telescope TW1

Product Name: BEAVERLAB Intelligent Astronomical Telescope TW1

Product Model: DDL-TW1

Product Net Weight: 6kg

Package Size: 688x410x197mm

Input Voltage: DC5V ⎓

Operating Temperature: -10°C ~45°C

Brand Ownerb: Beaver Technology(ShenZhen) Co.,Ltd.

Web Site: www.beaverlab-tech.com

Address: Room101.102，Building 6,F518 Idea Land,No.1065,Baoyuan Road,Laodong, Xixiang,Bao'an District,Shenzhen, Guang Dong,China